

# **NUTRITIONAL NEEDS OF INDIVIDUALS AND FAMILIES ACROSS THE LIFESPAN**

## **Nutrition Issues and Adolescents**

**Grade Levels: 9-12**

**Concept:** Nutrition

**Comprehensive Standard:** 6.2 Evaluate the nutritional needs of individual and families in relation to health and wellness across the lifespan

**Technical Standard:** 6.2.1 Analyze the effects of nutrients on health, appearance, job performance and personal/family life

### **LESSON COMPETENCIES:**

- ? Evaluate the role of key nutrients in maintaining and sustaining good health
- ? Identify food sources of the key nutrients
- ? Analyze the nutritional needs of adolescents
- ? Identify appropriate guidelines for healthy eating

### **ANTICIPATED BEHAVIORAL OUTCOMES:**

- ? Students identify the nutrients in food
- ? Make personal food choices that are nutrient dense.

### **Resources Needed:**

- ? Copies of handouts for all students
- ? 3/5 note cards
- ? Nutri- Bingo cards for all students
- ? Internet access for all students
- ? See NOTES TO TEACHER to determine alternatives which may need to be prepared

### **References for teachers and students:**

West, D. (2000). Nutrition and Fitness: Lifestyle Choices for Wellness. Goodheart-Wilcox Publishing, [www.goodheartwilcox.com](http://www.goodheartwilcox.com) or phone at 1-800-323-0440 Chapter 3, *How Nutrients Become You* and Chapter 11, *Nutrition For All Ages*; Chapters 5-10 address each of the six key nutrients: carbohydrates, fats, proteins, vitamins, minerals and water.

Largen, V., and Bence, D. (2002). Guide to Good Food. Goodheart-Wilcox Publishing, [www.goodheartwilcox.com](http://www.goodheartwilcox.com) or phone at 1-800-323-0440 Chapter 2 Nutritional Needs.

*Eating Habits of Today's Youth* is the focus of the May, 2001 issue of the Nourishing News newsletter, a publication of the Nutrition Information Resource Center at Clemson University [www.clemson.edu/NIRC](http://www.clemson.edu/NIRC) Click on Nutrition News; Click on Subscribe to free email newsletter, Nourishing News to reach this issue.

*Pyramid Explorer Nutrition Adventures*, a curriculum for elementary and middle grades utilizing a computer-assisted approach. Developed by the Oregon Dairy Council,

10505 S.W. Blvd., Portland, OR 07219 Phone is (503) 229-5033 and web address is [www.oregondairycouncil.org](http://www.oregondairycouncil.org)

A blank Food Guide Pyramid copy master is available from the Dairy Council of the Upper Midwest which can be printed and reproduced for classroom use. A downloadable blank Food Guide Pyramid is also available at the Dairy Council of California website [www.dairycouncilofca.org/edu/edu\\_prog\\_mhfc2.htm](http://www.dairycouncilofca.org/edu/edu_prog_mhfc2.htm)

Some excellent activities on calcium and iron in the diet, two nutrients often at low levels in the diets of adolescents, especially females, can be found at the Virginia Tech Cooperative Extension Service website. Access the calcium activity at [www.ext.vt.edu/pubs/nutrition/348-019/348-019.html](http://www.ext.vt.edu/pubs/nutrition/348-019/348-019.html) A similar activity on iron can be accessed at [www.ext.vt.edu/pubs/nutrition/348-371/348-371.html](http://www.ext.vt.edu/pubs/nutrition/348-371/348-371.html)

A calcium education program for girls 11-14, *Calcium! Do You Get It?* is available for downloading at <http://www.cfsan.fda.gov/~dms/ca-toc.html> Many of the activities can be adapted for older teens as well.

[www.kidshealth.org](http://www.kidshealth.org) KidsHealth provides health information for children from birth through adolescence, presented on separate areas for kids, teens and parents. One section focuses on teen health and includes articles on nutrition.

Several activities on nutrition developed by youth as a part of thinkquest can be found at <http://www.thinkquest.org/library/index.html>

Find out more about osteoporosis and prevention strategies by visiting the following website: [www.nof.org/prevention/risk.htm](http://www.nof.org/prevention/risk.htm)

### **Background Information:**

**Nutrition – the process by which your body uses the food you eat.** Nutrition has a major role in good health throughout the life cycle. However, often food choices are made based more on personal and social reasons than nutrition (refer to Unit 1).

Adolescents need more calories and nutrients than at any other time in their lives. Puberty is an intense period of growth with dramatic changes in height and weight. Because body mass almost doubles, adolescents are especially vulnerable to even modest levels of energy restriction (Adolescents, Growth and Nutrition, [www.intelhealth.com](http://www.intelhealth.com))

However, this dramatic increase in energy and nutrient requirements coincides with a time when many teens develop irregular eating habits because they are frequently eating away from and are often subject to the outside influence of their peers, for example in the areas of fast foods, fad diets, skipped meals, snacking and high-carbohydrate foods. Condemnation of such practices does little to assist adolescents in developing healthy eating habits (Adolescents, Growth and Nutrition, [www.intelhealth.com](http://www.intelhealth.com)).

The Washington State Department of Health provides this information for adults who care about teens stressing the importance of nutrition and healthy eating in adolescence:

- ? The rate of growth in adolescence is second only to that of infancy
- ? Mature bones, body tissues and organs are still developing
- ? Too little food or the wrong food can affect sexual maturation and growth
- ? Normal bone strength may never be reached if a youth doesn't get adequate calcium
- ? Eating habits developed during adolescence can set the tone for a lifelong habits

- ? Poor dietary habits are related to obesity, osteoporosis, cardiovascular (heart) disease and Type 2 diabetes
- ? Studies have shown that heart disease can begin in childhood and progress into adulthood
- ? Over-eating, under-eating and eating disorders can have devastating health and economic impacts
- ? Because each teen may be at a different phase of growth, a “one size fits all” approach to nutrition doesn’t always work. Teens’ food needs vary depending on growth rate, degree of maturation, body make-up, physical activity and health status.
- ? Teens should eat frequent meals and snacks.
- ? Eating breakfast has been shown to help teens be more alert at school and perform better in sports activities as well as maintain a healthy weight.

According to a February 2000 report on *Promoting Lifelong Healthy Eating* from the Center for Disease Control (CDC), the following is indicative of the eating habits of America’s youth:

- ? More than 84% of young people eat too much fat, and more than 91% eat too much saturated fat
- ? Only 1 in 5 young people eats the recommended five daily servings of fruits and vegetables. 51% of children and teens eat less than one serving of fruit a day and 29% eat less than one serving a day of vegetables that are not fried.
- ? The average calcium intake of teen girls is about 800 mg a day, considerably less than the recommended 1,200 mg of calcium.
- ? 1 in 5 students skips breakfast
- ? 13% of high school girls vomit, take laxatives or take diet pills to lose or keep from gaining weight. Harmful weight loss practices have been reported among girls as young as 9 years old.
- ? Adolescent girls appear to be at the highest risk for dietary inadequacies. This may be related to their eating patterns. Compared to other children, female teens have a higher tendency to skip breakfast, eat fewer meals and snacks, eat a larger proportion of meals and snacks away from home and drink the least fluid milk.

#### Nutrients:

A nutrient is a chemical used by the body for 1.) building and repairing body tissue, 2.) providing energy and 3.) regulating body processes. There are 6 groups of nutrients: carbohydrates, proteins, fats, vitamins, minerals and water. The human body needs over 40 different nutrients and food is the major source of nutrients for the body. However, no one food provides all of the nutrients the body needs.

## Learning Activities:

### Middle School Level

- ? Give each student a 3X5 note card; ask them to write down one or two things they have heard or know about nutrition or nutrients. Ask each student to share what he/she has written on his/her card. Discuss each statement and clarify nutrition misinformation.
- ? Define nutrition. Ask students why nutrition is important. Discuss the benefits of healthy eating/sound nutritional food choices.
- ? Ask students to complete the chart, *Nutrition Knowledge*. NOTE TO TEACHER: You may ask the students to complete the chart using a text, published article or website as resources or you may choose to use the chart as a graphic organizer for an illustrated lecture or PowerPoint presentation on the key nutrients. Discuss with students.
- ? Using a blank Food Guide pyramid, ask students to identify the key nutrients that would be found in the foods in each group.
- ? Assign each student one a nutrient (protein, carbohydrates, fats, Vitamin A, Vitamin C, B vitamins, iron, calcium); ask them to create a word search containing a minimum of ten foods that are considered “good” sources of that nutrient. Explain the guidelines used for food labeling to define a good source of each nutrient. (Use the website: [www.puzzlemaker.com](http://www.puzzlemaker.com))
- ? Play “Nutri-Bingo” to review the functions and sources of the key nutrients
- ? NOTE TO TEACHER: If you want to reinforce the importance of calcium in the diet of teens, use the activities in the calcium education program for girls 11-14, *Calcium! Do You Get It?*(see reference list)

### High School

- ? To introduce the study of nutrient, ask students to complete a KWL chart about nutrition and nutrients. Complete the first two columns indicating **K – I know**, **W – What I want to learn more about**. The **L – What I learned** can be completed at the conclusion of the study of nutrition and nutrients.
- ? Review the nutrients, their functions and food sources using the chart, *Nutrition Knowledge*. NOTE TO TEACHER: You may ask the students to complete the chart using a text, published article or website as resources or you may choose to use the chart as a graphic organizer for an illustrated lecture or PowerPoint presentation on the key nutrients. Discuss with students.
- ? Ask students to complete the Nutri-Quiz at the Nutrition on the Web website (see reference list). Clarify questions.
- ? Use the case studies at the Nutrition on the Web site with students. Discuss the nutrition related problems presented in these case studies. NOTE TO TEACHER: You could ask students to read the cases on the Web and lead a discussion or ask them to write responses to the cases presented. OR You might want to type up the case studies and present to student on note cards and lead a class discussion related to the cases presented. Ask student s to write their own case studies related to nutrition.

- ? Ask students to read the article *Eating Habits of Today's Youth* (see reference list). Ask students about their reaction to the information presented. This
- ? Include additional activities on calcium and iron, two nutrients often lacking in adolescent diets. See reference list for web based activities. Discuss alternate ways that teens can get calcium and iron in the diet. Ask students to research osteoporosis and iron-deficiency anemia.

**Extended Learning Activities:**

1. **Taste Panel** – Conduct a taste panel of flavored milk in your class or school. Purchase several flavors of milk. Develop a survey to determine the flavor favorites. Ask students if they would like to have flavored milk available at school. If flavored milk is not available in your community, prepare some of the milk recipes at the [www.whymilk.com](http://www.whymilk.com) site for the taste panel. Graph the results comparing student reactions to the various flavors. For more information about flavored milks, read *Flavored Milk: More Than Just Great Taste!* at [www.nutritionexplorations.org](http://www.nutritionexplorations.org) and learn more about one company that is making flavored milk by visiting [www.smilk.com](http://www.smilk.com)
2. **Milk Mustache Contest** - visit the [www.whymilk.com](http://www.whymilk.com) site and have fun with the milk mustache. Considering holding a milk mustache contest at your school with pictures of teachers and students. Coordinate a drink milk campaign in your school with this activity. Make posters promoting milk and milk products. Make milk mustache poster from the photos of contest winners.